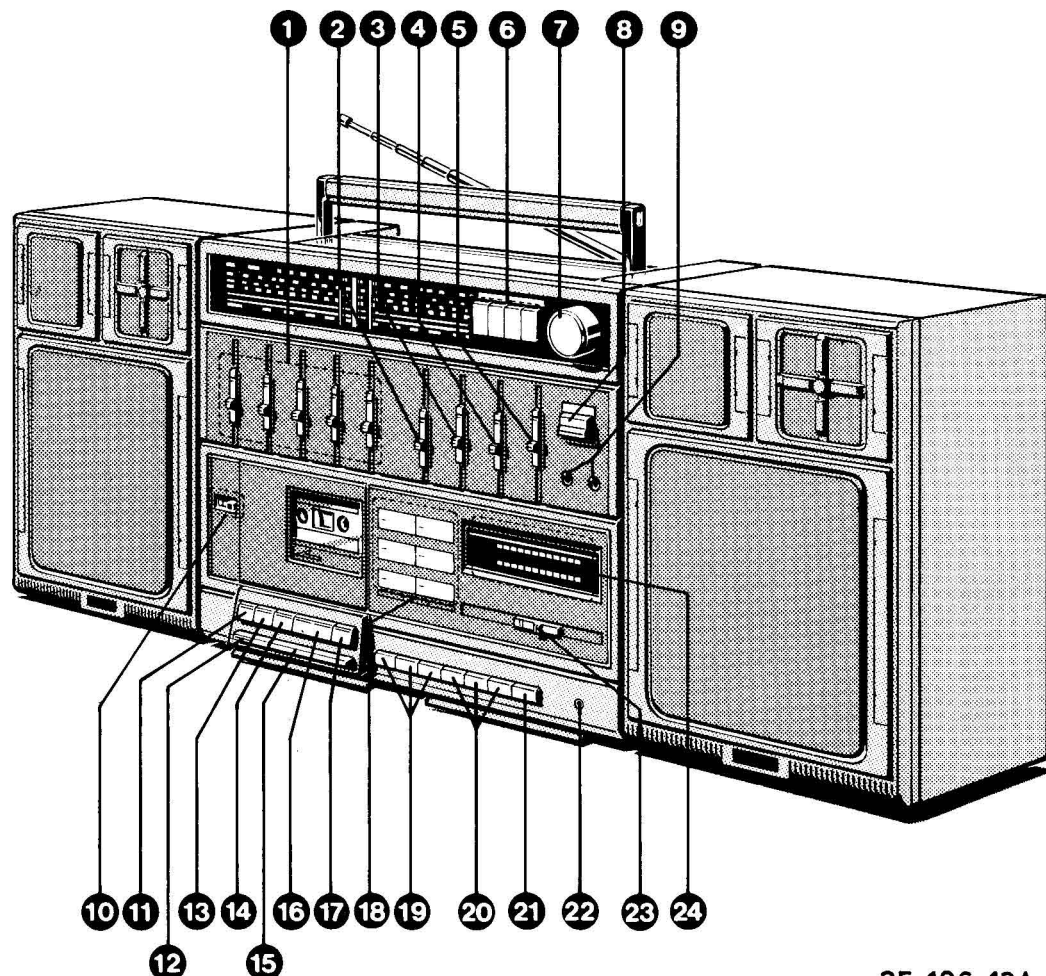


Service Service Service

For repair information of the cassette mechanism see Service Manual of "Recorders tape deck RTS-1" and "Recorders tape deck RTS-19".

Service Manual



35 196 12A



1	60 Hz, 300 Hz, 1 kHz, 4 kHz, 12 kHz	„Graphic Equalizer”	R603/653, R604/654 R605/655, R606/656 R607/657	18	AM-FM Tuner Auxiliary Tape	-FM Stereo -Phono „Mode indic.” -Dolby	D351-D352 D355-D353 D356-D354
2		„Volume”	R630/680	19	Tuner, Aux/ Phono/Tape	„Mode selection”	SK501
3		„Balance”	R627		Normal, I		
4	Mono-Stereo- Spatial	„Sound”	R626	20	Cr02, II Metal, IV	„Tape selection”	SK501
5		„Ext-Mic-Mixing”	R642/692	21		„Dolby B”	SK501
6	FM-SW- MW-LW	„Wave range selector”	SK101÷104	22		„Head phone”	BU601
7		„Tuning”	C100	23		„Manual recording”	R505/555
8		„Power switch”	SK701	24		„Led indic. batt. volt.” „Led indic. power on” „Led indic. VU R/L” „Led indic. Rec. level”	D501/D551 D502/552”
9		„Ext-microphones”	BU601/652	25		75Ω „Ext aerial”	BU101 (not valid for /02)
10		„Tape counter”		26		„Rif”	SK401
11		„Eject”		27		„Ext. loudspeakers”	BU303/353
12		„Record”	SK301, 702, 703	28		„Tape output”	BU302/352
13		„Rewind”	SK702, SK703	29		„Line input”	BU301/351
14		„Wind”	SK702, SK703	30	Aux/phono MD	„Input mode selection”	SK302
15		„Stop”	SK702, SK703	32		„Mains inlet”	BU701, SK701A
16		„Play”	SK702, SK703	33		„Ext. D.C. supply”	BU701, SK701B
17		„Pause”	SK702, SK703				

Power supply

	: 10-15 V
	: 12 V (10xR20)
	: 220 V, 50/60 Hz
	: 240 V, 50/60 Hz for/05 only

IF-FM	: 10,7 MHz $\pm$ 0,09 MHz
IF-AM	: 468 kHz $\pm$ 1 kHz
FM	: 87,5 - 108 MHz $\pm$ 0,5 MHz -0,3 MHz

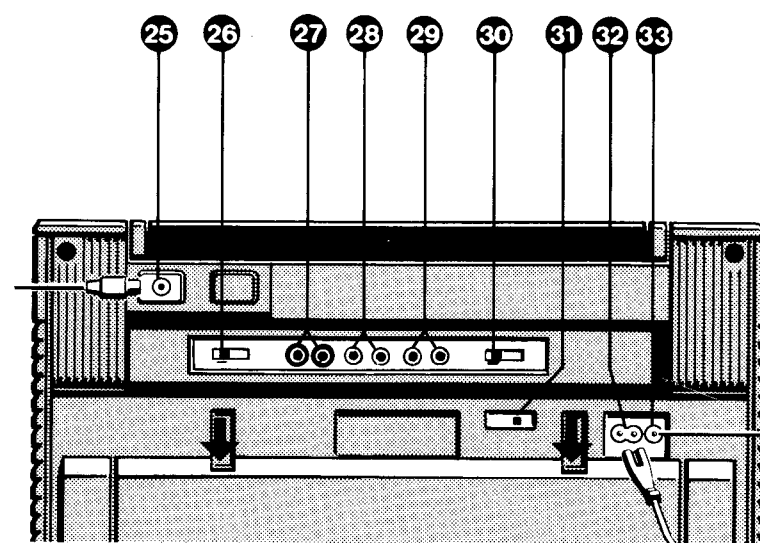
Tape deck-part

Tape speed : 4,76 cm/s $\pm$ 2%
Wow and flutter : $\leq$ 0,3%
Bias frequency : 73 kHz $\pm$ 200 kHz (SK401 „1’’)
S/N ratio : $\geq$ 45 dB (dolby off)

Normal	(I)	: 70 Hz-10 kHz
CR02	(II)	: 70 Hz-12 kHz
Metal	(IV)	: 70 Hz-14 kHz

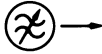
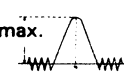
Ext. mic.	: 0,6 mV/ 1k	BU602/652
Line in/Aux	: 500 mV/47k	
Phono MD in	: 5 mV/47k	BU301/351
Ext. aerial	: signal in/75 Ω	BU101

Tape out level : SBC419, 315 Hz-0 dB
: 375 mV/22k $\pm$ 1 dB at BU302/352
Headphones : Power out/8-600 Ω BU601
Ext. loudspeakers : Power out/ $\geq$ 8 Ω BU303/353



35 197 A12

ITEM	CD																		
M1	G0	C104	A02	C110	B03	C118	F10	C144	G02	C149	F01	C154	C05	C159	C06	C166	A08	C175	D02
M1	E05	C105	B07	C113	C03	C139	D05	C145	G01	C150	G04	C155	B05	C161	A07	C167	A08	C176	D05
C101	B01	C106				C140	F01	C146	F01	C151	C14	C156		C162	F10	C170	A08	C177	D06
C102	B01	C108	C03			C143	F01	C147	F01	C152	B03	C157	C06	C164	C07	C172	C06	C178	C01
C103	B02	C109	C03	C110		C143	E01	C148	G01	C153	C05	C158	C07	C165	A08	C173	B05	C179	C05
C180	C07	C185	B10	C192	D08	C303	E08	C310	E08	C703	F06	C712	E06	D150	A07	D309	F09	D501	E08
C181	B08	C186	B10	C193	D09	C304	F10	C352	E08	C704	F07	C713	E06	D151	B07	D351	F09	D551	F08
C182	B08	C187	B10	C194	B08	C305	F09	C354	F08	C705	E07	C714	E07	D305	F10	D353	G09	D701	F07
C183	B08	C188	B08	A03	C306	C308	E08	C701	F06	C710	B05	D101	A02	D307	E10	D355	G09	D702	F06
C184	B09	C191	C08	C302	E10	C309	G08	C702	F06	C711	B05	D102	B03	D308	F08	D356	F09	D703	G07
D704	F07	F701	E05	R105	C03	R121	C01	R155	D04	R161	D06	R170	A08	R181	B08	R188	A09	R304	E08
D706	F08	R101	B02	R106	A03	R151	B05	R156	C07	R162	B07	R173	D09	R182	B09	R189	D09	R305	F10
D707	E05	R102	C02	R107	B03	R152	C04	R158	C06	R163	A07	R174	D09	R183	D09	R190	D09	R306	F09
D708	B10	R103	C02	R108	C03	R153	B05	R159	C06	R164	E10	R176	C01	R184	B10	R301	G09	R307	F09
D960	F09	R104	C03	R109	C04	R154	D05	R160	D05	R169	A08	R180	C06	R187	D08	R302	E10	R308	G08
R309	F08	R363	F08	R702	F06	R707	F07	S103	F02	S143	F02	S155	D06	TS150	A08	TS103	A03	TS702	F07
R310	E07	R366	G09	R703	F06	R708	F07	S104	B04	S144	F02	S156	A07	TS180	B09	TS104	C03	TS703	E06
R311	F09	R367	F09	R704	F07	R709	G07	S140	D01	S150	C04	BH101	A01	SK701	E06	TS152	D09	XR152	B05
R353	E08	R643	E07	R705	F07	S101	B01	S141	D01	S151	B05	BU701	F05	TS101	B02	TS180	C07	XR153	D06
R360	F09	R701	F06	R706	G07	S102	A02	S142	E01	S154	A06	BU701	F05	TS102	C02	TS701	F07		

SK						
MW-SK103	468 kHz *		Min. cap	S150 S151 S155		 max.
SW-SK102	5.8 MHz *		Max. cap.	S144		 max.
	18.2 MHz *		Min. cap.	C100d		 max.
	17.0 MHz *			C100c		
	6.2 MHz *			S140		
MW-SK103	1635 kHz *		Min. cap.	C146		 max.
	512 kHz *		Max. cap.	S143		 max.
	560 kHz *			S141		
	1500 kHz *			C141		
LW-SK104	148 kHz *		Max. cap.	S143		 max.
	200 kHz *			S142		
FM-IF						
FM-SK101	10.7 MHz $\Delta f = 300 \text{ kHz}$ (50 Hz)				 	 max.
				S154 S104	  	
				S156	  	
FM-RF						
FM-SK101	87.35 MHz Mod. 1 kHz Δf 22,5 KHz		Max. cap.	S103** S102**		 max
	108 MHz Mod. 1 kHz Δf 22,5 kHz		Min. cap.	C100b C100a		

*+ 1 kHz mod. 30%

Stereo-Decoder				
FM-SK101	no signal		R190	 freq. counter 19 kHz $\pm$ 0.2 kHz

**Trimming rod 4822 395 50135

↑ Repeat - Herhalen - Répéter - Wiederholen - Ricominciare - Repetera - Gentage - Gjentagelse - Toista

Fig. 2

- GB**
- 1 Place the peak of the band-pass curve in the middle of the picture by shifting the sweep frequency.
 - 2 Disconnect C167.
 - 3 Connect C167.

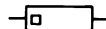
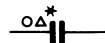
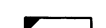
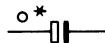
- F**
- 1 Le top de la courbe de réponse doit être amené au centre de l'écran par glissement de la fréquence de modulation.
 - 2 Déconnecter C167.
 - 3 Connecter C167.

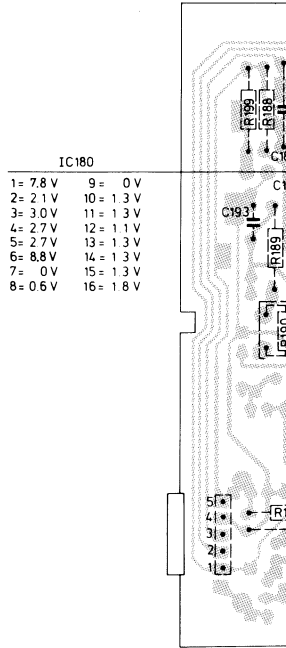
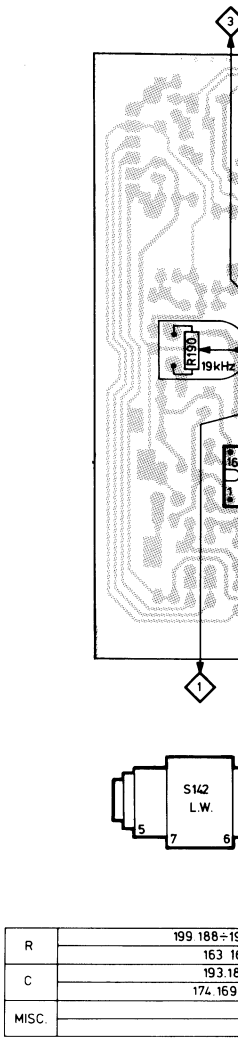
- I**
- 1 Il pico della curva di risposta deve trovarsi al centro dello schermo, il chè si farà spostando la frequenza di Wobbulazione.
 - 2 Togliere il collegamento C167.
 - 3 Collegare C167.

- NL**
- 1 De top van de doorlaatkromme in het midden van het scherm plaatsen door vèrschuiven van de wobbelfrequentie.
 - 2 Verbreek C167.
 - 3 Verbind C167.

- D**
- 1 Die Spitze der Durchlasskurve in der Mitte des Bildes legen dadurch, dass man die Wobbelfrequenz verschiebt.
 - 2 Unterbrechung C167.
 - 3 Verbindung C167.

„ Bei notwendigem Abgleich ist das Gerät auf die gesetzlich vorgeschriebenen Eckfrequenzen abzugleichen.“

	Carbon film 0.2 W 70°C 5%		Ceramic plate Tuning ≤ 120 pF NP.0 2% Others -20/+80%	*a = 2,5 V b = 4 V c = 6,3 V d = 10 V e = 16 V f = 25 V g = 40 V h = 63 V j = 100 V l = 125 V m = 150 V n = 160 V q = 200 V r = 250 V s = 300 V t = 350 V u = 400 V v = 500 V w = 630 V x = 1000 V A = 1,6 V B = 6 V C = 12 V D = 15 V E = 20 V F = 35 V G = 50 V H = 75 V I = 80 V
	Carbon film 0.33 W 70°C 5%		Polyester flat foil 10%	
	Metal film 0.33 W 70°C 5%		Metalized polyester flat film 10%	
	Carbon film 0.5 W 70°C 5%		Polyester flat foil small size (Mylar) 10%	
	Carbon film 0.67 W 70°C 5%		Polysterene film/foil 1%	
	Carbon film 1.15 W 70°C 5%		Tubular ceramic	
Ⓒ Chip component			Miniature single	
			Subminiature tantalum ± 20%	



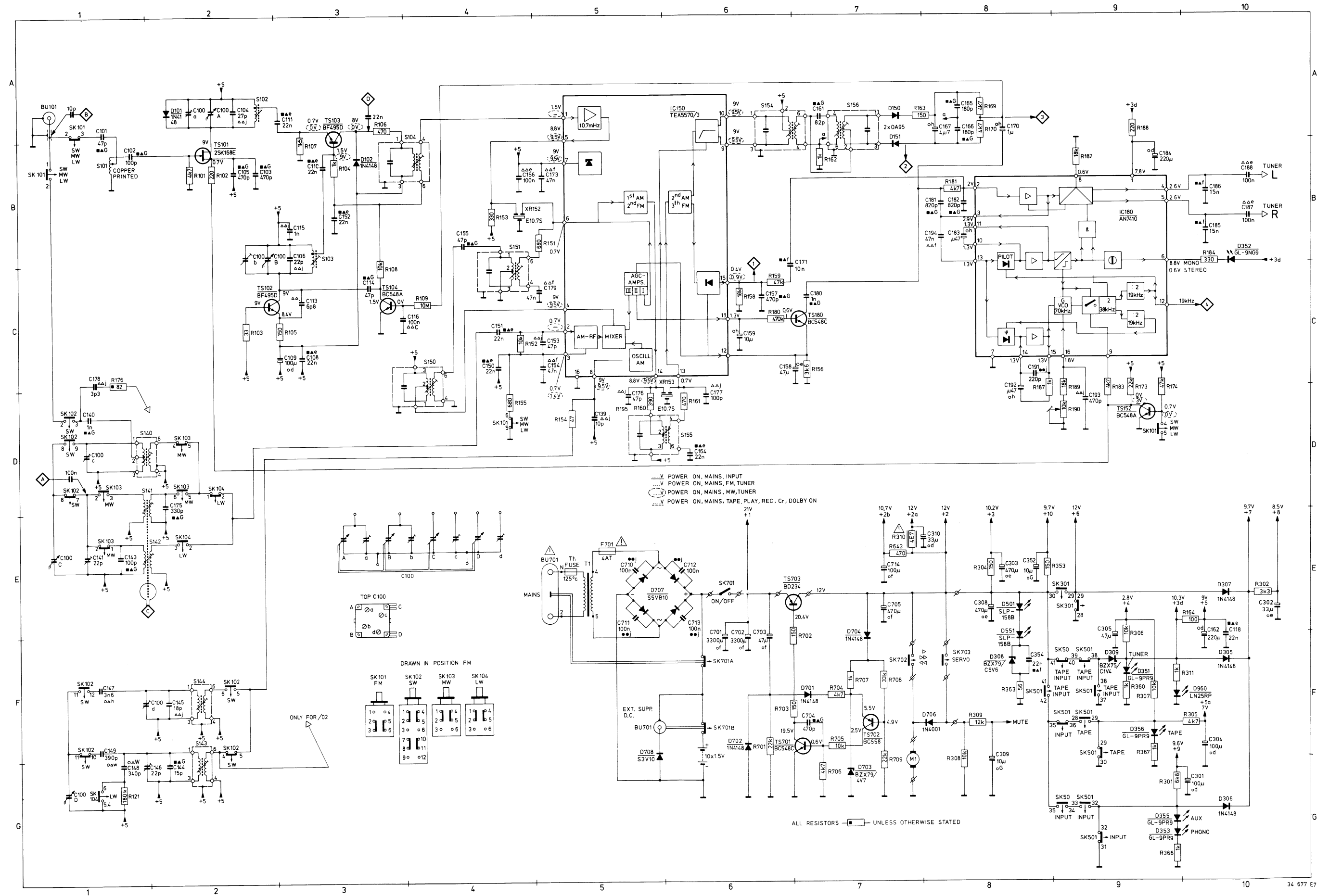
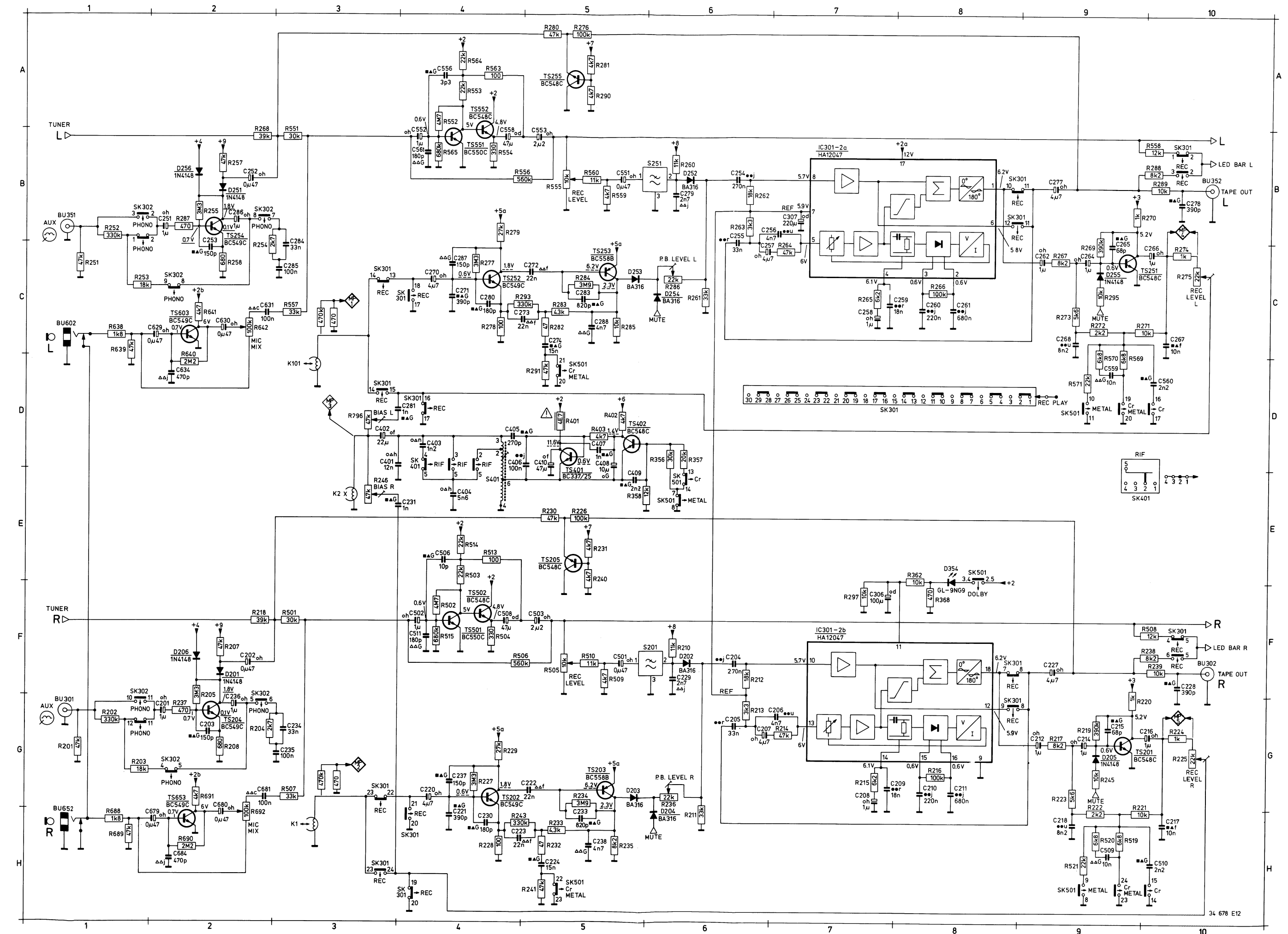
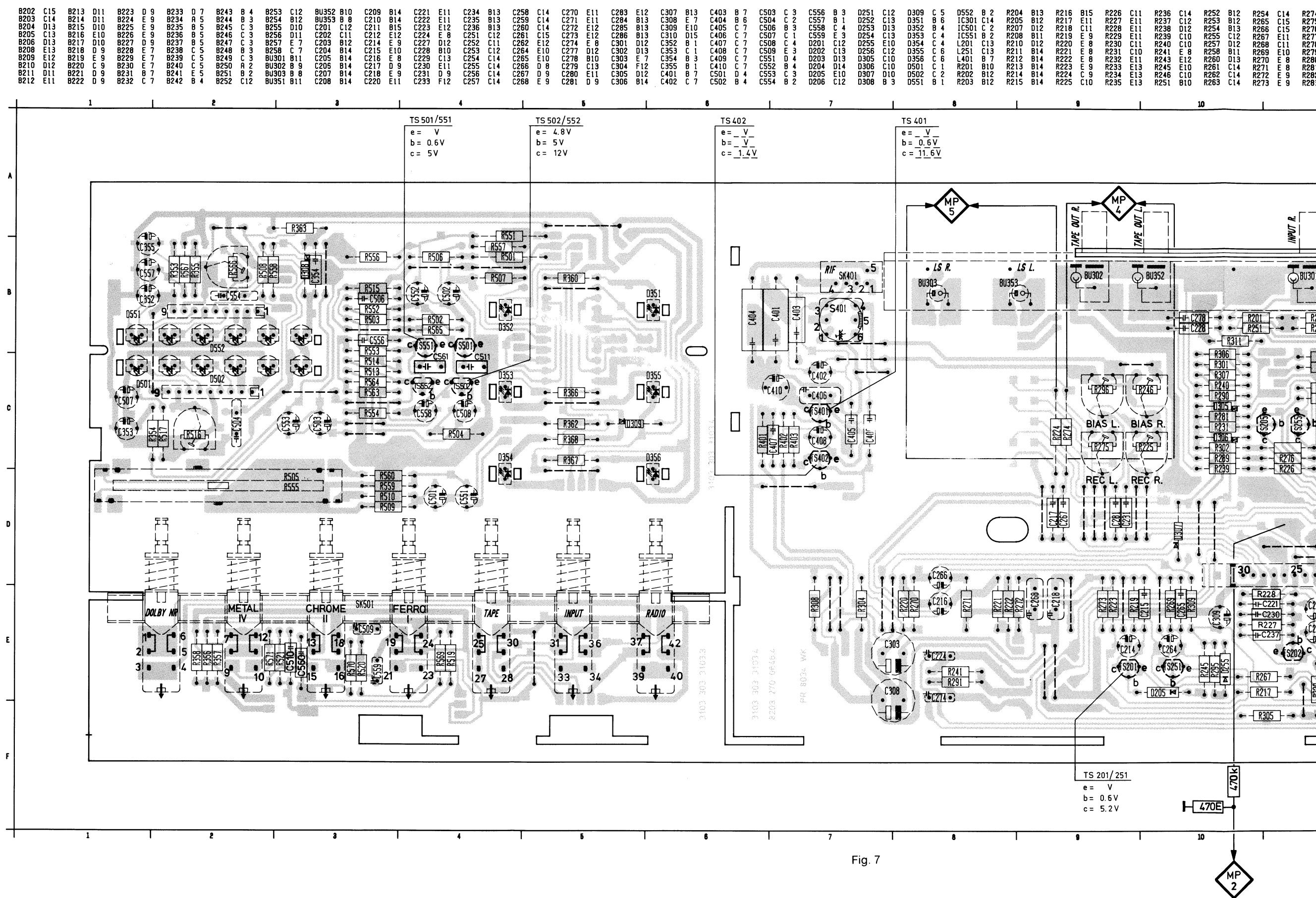


Fig. 5



ITEM	CD				
K1	H03	C673	H02	R295	C09
K2	E03	C680	G02	R296	D03
C201	G02	C681	G02	R356	D06
C202	F02	C684	H02	R357	D06
C203	G02	D201	F02	R358	E05
C204	F06	D202	F06	R362	E08
C205	G06	D203	G05	R368	F08
C206	G07	D204	H06	R401	D05
C207	G06	D205	G09	R403	D05
C208	G07	D206	F02	R501	F03
C209	G08	D251	B02	R502	F04
C210	G08	D252	B06	R503	E04
C211	G08	D253	C05	R504	F04
C212	G09	D254	C06	R505	F05
C214	G09	D255	C09	R506	F04
C215	G09	D256	B02	R507	C03
C216	G10	D354	E08	R508	F10
C217	H10	K101	D03	R509	F05
C218	H09	R201	G01	R510	F05
C220	G04	R202	G01	R513	E04
C221	H04	R203	G01	R514	E04
C222	G05	R204	G02	R515	F04
C223	H04	R205	G02	R519	H09
C224	H05	R207	F02	R520	H09
C227	F09	R208	G02	R521	H09
C228	F10	R210	F06	R551	B03
C229	F06	R211	H06	R552	A04
C230	H04	R212	F02	R553	A04
C231	E04	R213	G06	R554	B04
C233	H05	R214	G07	R555	B05
C234	G03	R215	G07	R556	B04
C235	G03	R216	G08	R557	C03
C236	G02	R217	G09	R558	B10
C237	G04	R218	F02	R559	B05
C238	H05	R219	G09	R560	B05
C251	B02	R220	G09	R563	A04
C252	B02	R221	G09	R564	A04
C253	B02	R222	G09	R565	B04
C254	B06	R223	G09	R569	C09
C255	B06	R224	G10	R570	C09
C256	B06	R225	G10	R571	D09
C257	C06	R226	F05	R638	C01
C258	C07	R227	G04	R639	C01
C259	C08	R228	H04	R640	C02
C260	C08	R229	G04	R641	C02
C261	C08	R230	E05	R642	C02
C262	C09	R231	E05	R688	H01
C264	C09	R232	H05	R689	H01
C265	B09	R233	H05	R690	H02
C266	C10	R234	G05	R691	G02
C267	C10	R235	H05	R692	H02
C268	C09	R236	G06	S201	F06
C270	C04	R237	G02	S251	B06
C271	C04	R238	F10	S401	F04
C272	C05	R239	F10	BU301	G01
C273	C04	R240	F05	BU302	F10
C274	C05	R241	H05	BU351	B01
C277	B09	R243	H04	BU352	B10
C278	B10	R245	G09	BU602	C01
C279	B06	R246	F03	BU652	H01
C280	C04	R251	C01	IC301A	B07
C281	D04	R252	B01	IC301B	F07
C283	C05	R253	C01	TS201	G09
C284	B03	R254	C02	TS202	G04
C285	C03	R255	B02	TS203	G05
C286	B02	R257	B02	TS204	G02
C287	C04	R258	C02	TS205	F05
C288	C05	R260	B06	TS251	C10
C306	F07	R261	C06	TS252	C04
C307	B07	R262	B06	TS253	C05
C401	D03	R263	B06	TS254	B02
C402	D03	R264	C07	TS255	A05
C403	D04	R265	C07	TS401	D05
C404	E04	R266	C08	TS402	B05
C405	D04	R267	C09	TS501	F04
C406	D04	R268	B02	TS502	F04
C407	D05	R269	C09	TS551	B04
C408	D05	R270	B10	TS552	A04
C409	E05	R271	C09	TS603	C02
C410	D05	R272	C09	TS653	H02
C501	F05	R273	C09		
C502	F04	R274	C10		
C503	F05	R275	C10		
C506	F04	R276	A05		
C508	F04	R277	C04		
C509	H09	R278	C04		
C510	H10	R279	F07		
C511	F04	R280	A05		
C551	B05	R281	A05		
C552	B04	R282	C05		
C553	B05	R283	C05		
C556	A04	R284	C05		
C558	B04	R285	C05		
C559	D09	R286	C06		
C560	D09	R287	B02		
C561	B04	R288	B10		
C629	C02	R289	B10		
C630	C02	R290	A05		
C631	C02	R291	D05		
C634	D02	R293	C04		





CS 95 441

B601	D10	BU601	A10	C604	A 4	C612	B 3	C619	C11	C634	D5	C633	A 4	C658	B 2	C666	D 8	C684	C 6	C683	B 4	C705	B 7	D702	C 7	IC601	D11	R606	B 3	R613	A 4	R621	B 3	R629	C 2	R635	D11	R642	C 5	R654	B 5	R661	A 5	R668	A 3	R679	D 2	R685	D 9	R692	C 5	R705	C 7	TS602	B
B602	D10	BU602	C 5	C605	B 5	C613	B 3	C620	D11	C626	C12	C651	B 6	C659	A 2	C667	C 8	C673	C 9	C680	C 5	C710	B 8	D703	C 7	IC651	D 9	R607	B 2	R614	A 2	R622	A 3	R630	C 1	R636	C11	R643	C 4	R655	B 4	R662	B 3	R669	B 3	R680	C 1	R686	C 9	R706	C 7	TS603	D		
B603	C10	BU652	C 6	C606	A 2	C614	C 2	C621	D11	C628	C11	C653	B 5	C660	A 3	C668	C 8	C675	C 9	C682	A 1	C711	B 8	D704	B 7	R601	B 1	R608	A 6	R615	A 2	R623	B 2	R630	B 1	R637	B11	R644	B 1	R656	B 3	R663	A 5	R671	B 3	R681	C 8	R687	B11	R707	C 7	TS651	B		
B604	D10	BU701	A12	C607	A 2	C615	C 2	C622	C11	C629	C 5	C654	A 4	C662	B 3	C669	C 8	C676	C10	C701	B10	C712	B 8	D706	B 7	R602	B 1	R609	A 6	R616	A 2	R624	C 3	R631	C11	R638	D 6	R645	B 1	R657	B 3	R664	B 2	R672	A 3	R682	D 9	R688	C 6	R701	C 7	TS652	B		
B605	C 9	C601	B 6	C608	A 2	C616	C 8	C623	C12	C630	D 5	C655	B 4	C663	A 3	C670	C 9	C677	D 9	C702	C10	C713	B 8	D707	B 8	R603	B 6	R610	A 5	R617	A 4	R625	D 3	R632	D10	R639	D 6	R651	B 1	R658	B 6	R665	A 2	R673	B 2	R682	D 9	R689	C 6	R702	D 7	R709	C 7	TS653	C
B606	B 8	C602	A 5	C609	A 3	C617	C11	C624	D12	C631	D 4	C656	A 2	C664	D 2	C671	D 9	C678	D 9	C703	C 8	C714	C 4	D708	B12	R604	B 5	R611	A 5	R618	A 3	R626	C 3	R633	C12	R640	D 5	R652	B 1	R659	A 6	R666	A 2	R674	C 3	R683	C 9	R690	C 5	R703	C 7	SK701	B 9	TS701	C
B607	B 8	C603	B 5	C610	A 3	C618	C11	C625	C12	C632	A 1	C657	B 2	C665	C 2	C672	C 9	C679	C 5	C704	C 7	D701	C 7	F701	B 8	R605	B 4	R612	B 4	R619	B 3	R627	C 2	R634	C11	R641	D 5	R653	B 6	R660	B 5	R667	A 4	R675	D 3	R684	C 9	R691	C 5	R704	C 7	TS601	B 4	TS702	C

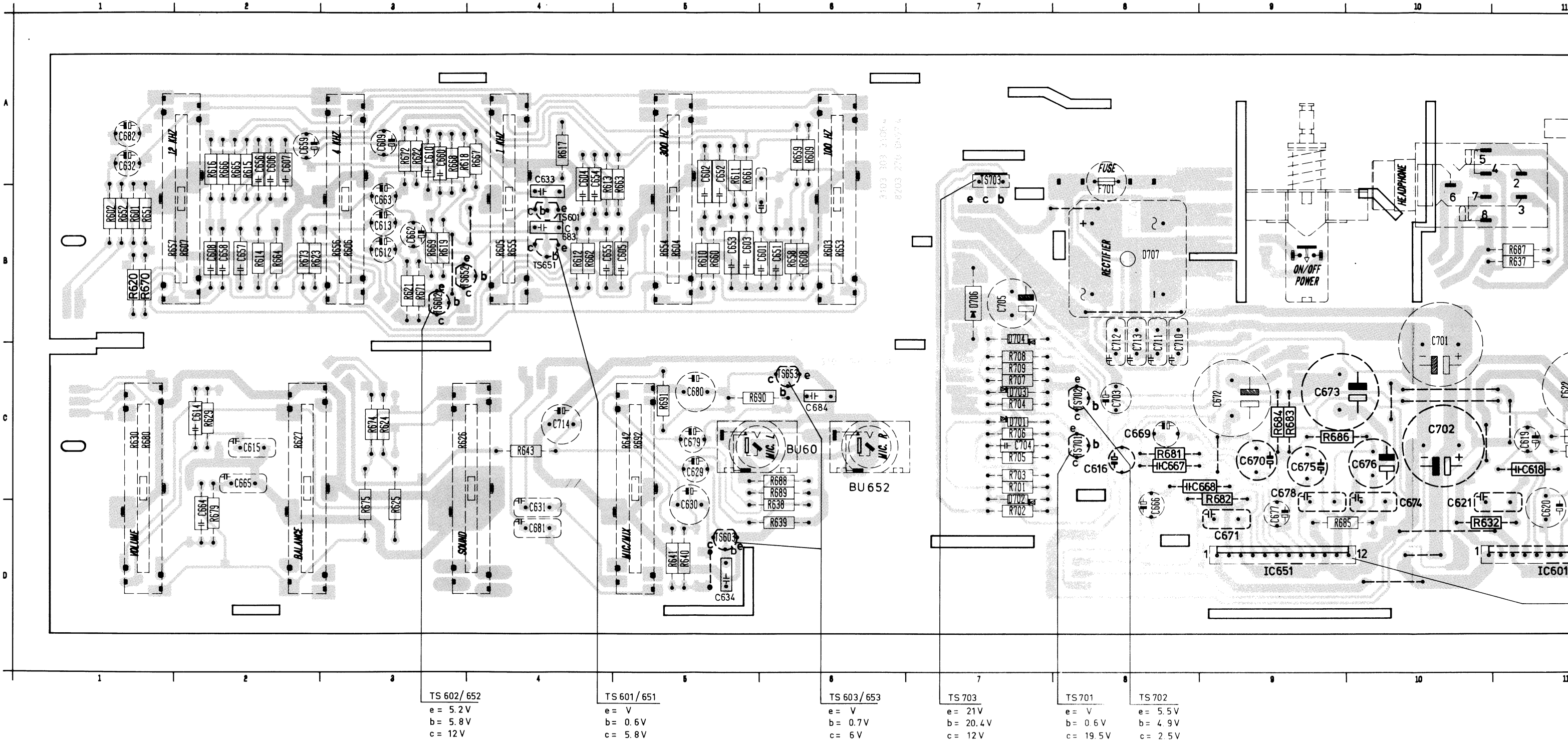
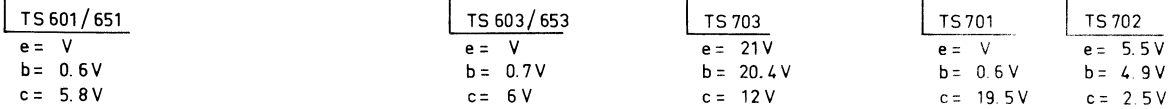
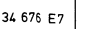


Fig 8



35 019 E7

ITEM	CD		
C355	C02	R634	B09
C504	F01	R635	C11
C507	H03	R636	B10
C534	D01	R637	E11
C557	E03	R651	H01
C601	C04	R652	G01
C602	B04	R653	I03
C603	B04	R654	I03
C604	B04	R655	H02
C605	B04	R656	H02
C606	B04	R657	H01
C607	B04	R658	I04
C608	B04	R659	I05
C609	B05	R660	I04
C610	B05	R661	I05
C612	A06	R662	H04
C613	B06	R663	H05
C614	B07	R664	H04
C615	B07	R665	H05
C616	B08	R666	H05
C617	B08	R667	H05
C618	B08	R668	H05
C619	B08	R669	H06
C620	B09	R670	H02
C621	B09	R671	G06
C622	B09	R672	H06
C623	B11	R673	I05
C624	B11	R674	H07
C625	B11	R675	H07
C626	C10	R679	H07
C627	B10	R680	H07
C628	C10	R681	I08
C632	A01	R682	I09
C633	B05	R683	I11
C651	I04	R684	H10
C652	I04	R685	I11
C653	I04	R686	I10
C654	H04	R687	E11
C655	I04	BU303	F12
C656	H04	BU353	D12
C657	H04	IC501	F02
C658	H04	IC551	D02
C659	H05	IC601	B09
C662	G06	IC651	H09
C663	H06	TS601	B05
C664	H07	TS602	A06
C665	I07	TS651	H05
C666	H08	TS652	H06
C667	I08		
C668	H08		
C669	I08		
C670	H09		
C671	I09		
C672	H09		
C673	I11		
C674	I11		
C675	H11		
C676	I10		
C677	H10		
C678	I10		
C682	H01		
C683	H05		
D352	C03		
R354	E02		
R355	G02		
R517	H02		
R566	D01		
R567	E02		
R601	A01		
R602	A01		
R603	C03		
R604	B03		
R605	B02		
R606	B02		
R607	B01		
R608	C04		
R609	C05		
R610	B04		
R611	B05		
R612	B04		
R613	B05		
R614	B04		
R615	B05		
R616	B05		
R617	B05		
R618	A05		
R619	A06		
R620	A02		
R621	A06		
R622	B06		
R623	C05		
R624	B07		
R625	B07		
R626	E07		
R627	E07		
R629	B07		
R630	B07		
R631	C08		
R632	C09		
R633	C11		



CS 95 443

C100	C02	C105	C02	C111	B02	C118	B02	C144	C03	C149	B03	C154	C04	C161	D04	C167	C05	C176	C04	C182	B04	C187	B05	C194	B05	C205	H07	C210	H07	C216	F02	C222	E05	C229	G06	C235	G06	C252	G05	C258	F07	C264	E04	C270	E05	C277	F06	C283	E06	C288	E06	C305	F05	C310	F08	C402	G02
C101	B02	C106	C02	C113	C02	C139	D03	C145	C03	C150	C03	C156	D04	C163	C04	C170	C05	C177	C04	C183	B05	C188	B05	C201	G05	C206	G07	C211	G08	C217	F03	C223	E05	C230	E04	C236	G06	C254	G07	C259	G07	C265	E04	C271	E05	C278	G04	C284	G06	C301	F05	C306	H07	C353	B07	C403	G02
C102	B02	C108	C02	C114	C02	C140	B03	C146	B04	C151	B04	C157	C04	C164	B04	C171	B04	C179	C03	C184	B05	C191	B05	C202	G05	C207	G07	C212	E06	C218	F03	C224	E02	C231	F04	C237	E06	C255	F07	C260	F07	C266	F02	C272	E05	C279	G06	C285	G06	C302	F06	C307	H07	C354	C08	C404	G01
C103	B01	C109	C01	C115	C02	C141	B02	C147	C03	C152	D02	C158	D03	C165	C05	C173	D03	C180	C04	C185	B04	C192	B05	C203	G05	C208	H07	C214	E04	C220	E05	C227	F05	C233	E06	C238	E06	C256	G07	C261	G08	C267	F03	C273	E05	C280	E05	C286	G06	C303	E02	C308	E02	C355	C07	C405	G02
C104	B02	C110	C02	C116	C02	C143	B02	C148	B04	C153	C07	C159	D04	C166	C05	C175	B03	C181	B04	C186	B04	C193	B05	C204	G07	C209	H07	C215	E04	C221	E04	C228	G04	C234	C06	C251	G05	C257	F07	C262	E06	C268	F03	C274	E02	C281	F03	C287	F05	C304	E05	C309	E04	C401	G01	C406	G02
C407	G01	C502	C09	C508	B09	C552	C09	C558	B09	D101	B02	D202	C06	D251	C06	D256	G06	D309	B10	D355	B10	D552	B08	R105	C02	R121	B04	R155	B04	R161	C04	R170	C05	R181	B04	R188	B05	R201	G04	R207	F06	R213	G07	R218	G05	R223	E03	R229	F05	R234	E06	R239	F04	R246	G04	R257	F06
C408	C02	C503	B08	C509	F10	C553	B08	C559	F10	D102	C01	D203	F06	D252	G06	D305	C04	D351	B10	D356	A10	R101	B01	R106	C02	R151	D03	R156	D03	R162	D04	R173	B03	R182	B04	R189	B05	R202	G05	R208	G05	R214	G07	R219	E04	R224	F03	R230	G05	R235	E06	R240	G04	R251	G04	R258	G05
C409	C02	C504	B08	C510	E10	C554	C08	C560	E10	D150	C05	D204	F07	D253	F06	D306	G04	D352	B09	D501	B07	R102	B01	R107	C02	R152	C04	R158	C04	R163	C05	R174	B02	R183	B04	R190	C05	R203	G06	R210	F06	R215	G07	R220	F02	R225	F04	R231	G04	R236	G07	R241	E02	R252	G05	R260	F06
C410	G01	C506	B09	C511	B09	C556	C09	C561	B09	D151	C05	D205	E04	D254	F07	D307	F04	D353	B09	D502	B08	R103	C02	R108	D02	R153	C03	R159	B04	R164	C05	R177	E05	R184	B05	R198	B04	R204	G06	R211	G07	R216	G08	R221	E03	R226	F05	R232	E05	R237	G06	R243	E06	R253	G06	R261	G07
C501	A09	C507	B07	C551	A09	C557	C07	C567	C07	D201	C06	D206	G06	D255	E04	D308	C08	D354	A09	D551	B07	R104	C02	R109	D02	R154	C03	R160	C04	R169	C05	R180	C04	R187	B05	R199	B05	R205	G06	R212	G07	R217	E04	R222	E03	R228	F04	R233	E06	R238	F06	R245	E04	R254	G06	R262	G07
R263	G07	R269	E04	R274	G03	R279	E05	R284	E06	R289	F04	R296	G03	R305	F04	R310	F08	R356	E10	R363	C08	R402	G01	R504	B09	R509	A09	R516	B08	R551	C09	R556	C09	R563	B09	R570	F10	S104	D01	S151	C03	S251	G06	BU351	H05	IC301	G07	SK103	A03	TS101	B02	TS201	E04	TS251	E04	TS401	G02
R264	G07	R270	F02	R275	F03	R280	G05	R285	E06	R290	G04	R297	G07	R306	G04	R311	G04	R357	F10	R366	B10	R403	G02	R505	A08	R510	A09	R517	B07	R552	B09	R557	C09	R564	B09	R571	E10	S140	B03	S154	D04	S401	G02	BU352	H04	IC301	B08	SK104	A04	TS102	C02	TS202	E05	TS252	E05	TS402	F02
R265	G08	R271	E03	R276	F05	R281	G04	R286	G07	R291	E02	R301	G04	R307	G04	R353	C07	R358	F10	R367	A10	R501	C09	R506	C09	R513	B09	R519	F10	R553	B09	R558	C08	R565	B09	S101	B01	S143	B04	S155	C04	BU301	H05	BU353	G03	IC351	B08	SK301	F05	TS103	C02	TS203	E06	TS253	E06	TS501	B09
R267	E04	R272	E03	R277	E04	R282	E05	R287	G06	R293	E06	R302	F04	R308	F02	R354	B07	R360	C10	R368	B10	R502	B09	R507	C09	R514	B09	R520	F10	R554	B09	R559	A09	R566	C08	S102	B02	S144	C03	S156	D05	BU302	H03	IC150	C04	SK101	A02	TS104	C02	TS204	G05	TS254	G05	TS502	B09		
R268	C05	R273	E03	R278	F05	R283	E06	R288	F06	R295	E04	R304	F02	R309	E04	R355	C08	R362	F10	R401	G01	R503	B09	R508	C08	R515	C09	R521	E10	R555	A08	R560	A09	R569	F10	S103	C02	S150	C03	S201	G06	BU303	G02	IC180	B05	SK102	A03	SK501	D10	TS180	C04	TS205	G04	TS255	G05	TS551	B09

TS552 B09
XR152 C03
XR153 C04

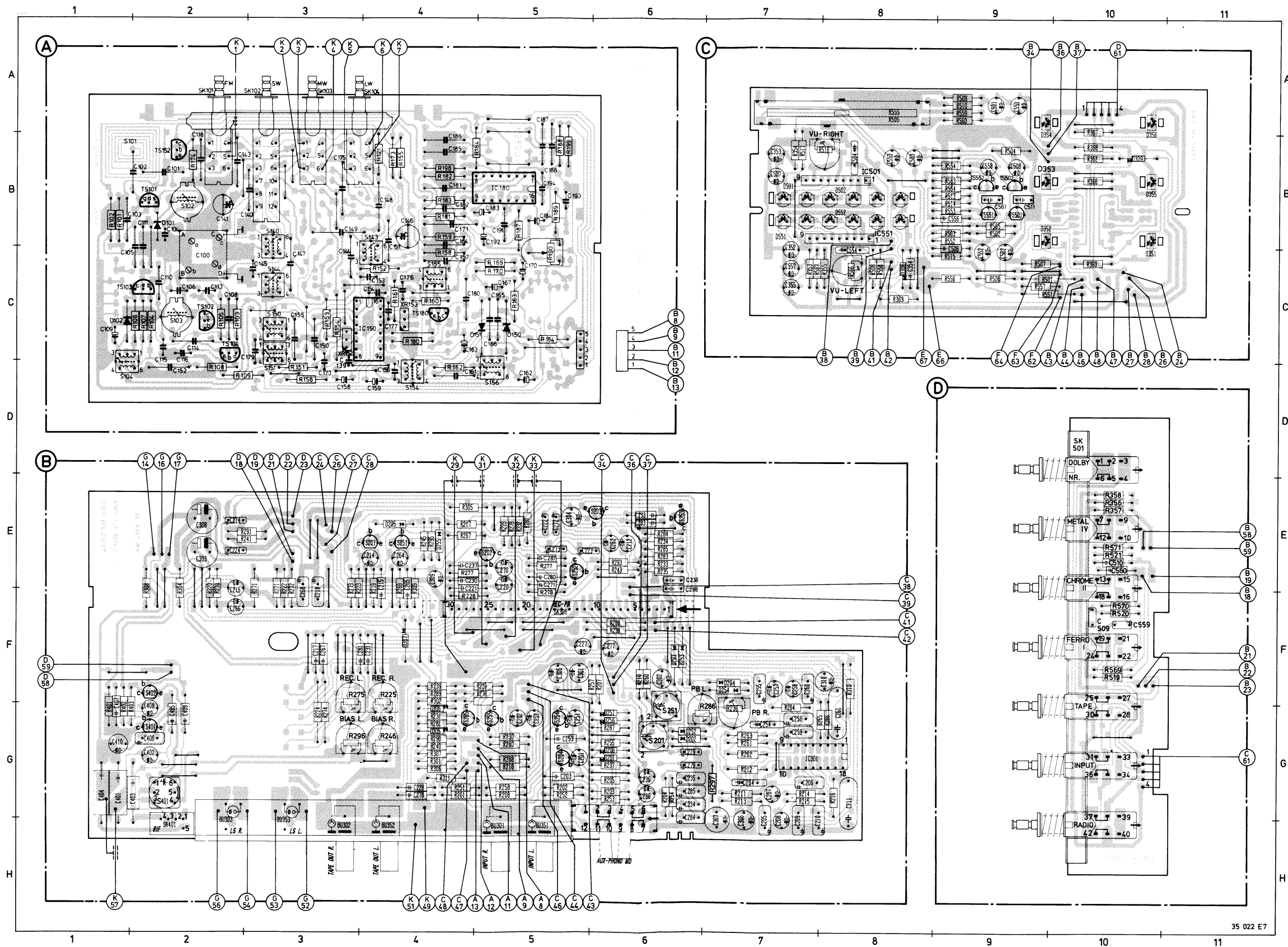
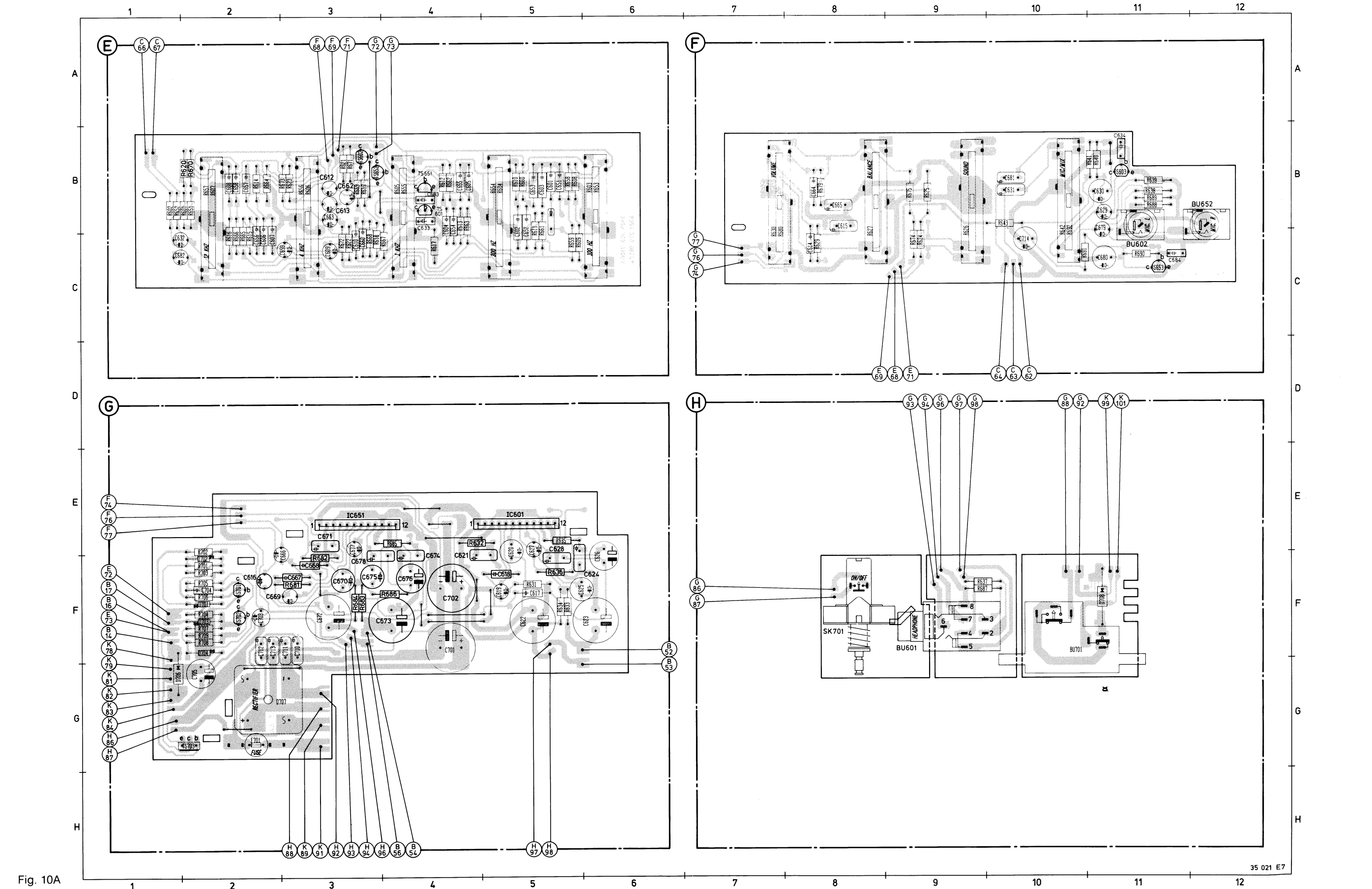


Fig. 10

C601	B05	C606	C02	C612	B03	C617	F05	C623	F06	C628	F05	C633	B04	C654	B04	C659	C03	C665	B08	C670	F03	C675	F03	C680	C11	C701	F04
C602	B05	C607	C02	C613	B03	C618	F05	C624	F05	C629	B11	C634	B11	C655	B04	C660	C03	C666	F03	C671	F03	C676	F04	C681	B10	C702	F04
C603	B05	C608	B02	C614	C08	C619	F05	C625	F05	C630	B11	C651	B05	C656	C02	C662	B03	C667	F03	C672	F03	C677	F03	C682	C01	C703	F02
C604	B04	C609	C03	C615	B08	C621	F04	C626	F06	C631	B10	C652	B05	C657	B02	C663	B03	C668	F03	C673	F04	C678	F03	C683	B04	C704	F02
C605	B04	C610	C03	C616	F02	C622	F05	C627	E05	C632	C01	C653	B05	C658	B02	C664	B08	C669	F03	C674	F04	C679	B11	C684	C11	C705	G02

R667	C04	R672	C03	R681	F03	R686	F04	R691	C10	R704	F02	R709	F02	BU701	F10	TS602	B03	TS701	F02
R668	C03	R674	C09	R682	F03	R687	F09	R692	B10	R705	F02	T662	B04	IC601	E05	TS603	B11	TS702	F02
R669	B03	R675	B09	R683	F03	R688	B11	R701	F02	R706	F02	BU601	F09	IC651	E03	TS651	B04	TS703	G02
R670	B02	R679	B08	R684	F03	R689	B11	R702	E02	R707	F02	BU602	B11	SK701	F08	TS652	B03		
R671	B03	R680	B07	R685	F04	R690	C11	R703	F02	R708	F02	BU652	B12	TS601	B04	TS653	C11		

C710	F03	D701	F02	D707	G02	R603	B06	R608	B05	R613	B04	R618	C03	R623	B03	R629	C08	R634	F05	R639	B11	R651	B02	R656	B03	R661	B05
C711	F03	D702	F02	D708	F11	R604	B05	R609	C05	R614	B02	R619	B03	R624	C09	R630	B07	R635	E05	R640	B11	R652	B01	R657	B02	R663	B04
C712	F02	D703	F02	F701	C02	R605	B04	R610	B05	R615	C02	R620	B02	R625	B09	R631	F05	R636	F05	R641	B11	R653	B06	R658	B05	R664	B02
C713	F02	D704	F02	R601	B02	R606	B03	R611	B05	R616	C02	R621	B03	R626	B09	R632	F04	R637	F09	R642	B10	R654	B05	R659	C05	R665	C02
C714	C10	D706	G01	R602	B01	R607	B02	R612	B04	R617	C04	R622	C03	R627	B08	R633	F05	R638	B11	R643	B10	R655	B04	R660	B05	R666	C02



GB ELECTRICAL MEASUREMENTS AND ADJUSTMENTS (see Fig. 12)

Notes:

- Prior to any measurement or adjustment with the tape running, heads and tape guides should be degaussed and cleaned.
- The measurements and adjustments are related to the left-hand channel. The corresponding test points and adjusting elements for the right-hand channel are given in brackets.
- The voltages have been measured relative to earth.

Required test equipment and test cassettes

- Frequency counter.
- AF-generator.
- AC-millivoltmeter.
- Wow-and-flutter-meter.
- Universal test cassette SBC419Cr 4822 397 30069.

Remarks (see Fig. 12)

- *a The maximum permissible speed deviation is 2%. Moreover, the wow-and-flutter value can be read. This value should not exceed 0.3%.
- *b Disable the bias by disconnecting R401.
- *c If the accuracy requirements are less stringent a high-quality chromium cassette may be used as an alternative.
- *d - If necessary repeat adjustment.
- When one channel is adjusted this may slightly affect the adjustment of the other channel.
- If the adjustment is correct the frequency response curve will be similar to curve b in Fig. 11, distortion $\leq 3\%$.
- If the bias is too small, the distortion will increase. The frequency response curve will then be as shown in Fig. 11 curve a.
- If the bias level is too high this will result in excessive treble attenuation, see curve c in Fig. 11.

F REGLAGES ELECTRIQUES ET MESURES (voir Fig. 12)

Remarques:

- A chaque mesure ou réglage à la chaîne, les têtes et guide-bande doivent être démagnétisées et nettoyées.
- Aux mesures et réglages, on s'est basé sur le canal de gauche. Les points de connexion et les organes d'ajustage pour le canal de droite sont donnés entre parenthèses.
- Les tensions sont mesurées par rapport à la masse.

Instruments de mesure et cassette d'essai requis

- Fréquencemètre.
- Générateur BF.
- Millivoltmètre AC.
- Instrument du pleurage.
- Cassette d'essai universelle SBC419Cr 4822 397 30069.

NL ELEKTRISCHE METINGEN EN INSTELLINGEN (zie Fig. 12)

Opmerkingen:

- Voor elke meting of instelling met lopende band dienen de koppen en bandgeleiders gedemagnetiseerd en gereinigd te worden.
- Bij de metingen en instellingen is uitgegaan van metingen aan het linker kanaal. De aansluitpunten en afregelorganen voor het rechter kanaal zijn tussen haakjes vermeld.
- De spanningen zijn gemeten t.o.v. de massa.

Benodigde meetinstrumenten en testcassettes

- Frequentie teller.
- LF-generator.
- AC-millivoltmeter.
- Wow en flutter meter.
- Universal testcassette SBC419Cr-4822 397 30069.

Opmerkingen: (zie Fig. 12)

- *a Max. toelaatbare snelheidsafwijking 2%. Tevens kan bij deze meting de jengelwaarde worden afgelezen. Deze waarde mag max. 0.3% bedragen.
- *b Voormagnetisatie uitschakelen door R401 los te nemen.
- *c Bij minder hoge nauwkeurigheid kan ook een chromiumcassette van goede kwaliteit worden gebruikt.
- *d - Bij het instellen van het ene kanaal kan het andere iets worden beïnvloed.
- Bij een goede instelling zal de frequentie karakteristiek als in Fig. 11 curve b verlopen, vervorming $\leq 3\%$.
- Bij een te kleine voormagnetisatie wordt de vervorming te groot. De frequentie karakteristiek zal er dan uitzien als getekend in Fig. 11 curve a.
- Bij een te grote voormagnetisatie worden de hoge tonen te veel verzwakt, zie de karakteristiek Fig. 11 curve c.

Remarques (voir Fig. 12)

- *a Ecart maximum admissible 2%. On pourra aussi lire le niveau de pleurage qui ne doit pas dépasser 0.3%.
- *b Couper la prémagnétisation en enlevant R401.
- *c Si les exigences point de vue précision ne sont pas tellement élevées, une cassette au chrome de bonne qualité pourra aussi convenir.
- *d - Eventuellement répéter la mesure.
- Lors du réglage d'un des canaux on constate qu'il y a incidence sur l'autre.
- Si le réglage est comme il faut, la courbe de fréquence aura la forme de la Fig. 11 courbe b, distorsion $\leq 3\%$.
- Si la prémagnétisation est trop faible, la distorsion devient trop importante. La courbe de fréquence aura alors la forme de celle de la Fig. 11 courbe a.
- Si le courant de prémagnétisation est trop élevé les aigus sont trop atténués, voir courbe c de la Fig. 11.

D ELEKTRISCHE MESSUNGEN UND EINSTELLUNGEN (siehe Bild 12)

Anmerkungen:

- Vor jeder Messung oder Einstellung mit laufendem Band sind die Köpfe und Bandführungen zu entmagnetisieren und zu reinigen.
- Bei den Messungen und Einstellungen ist von Messungen am linken Kanal ausgegangen. Die Anschlusspunkte und Abgleichorgane für den rechten Kanal sind eingeklammert.
- Die Spannungen sind gegen Masse gemessen.

Erforderliche Messgeräte und Testcassetten

- Frequenz-zähler.
- NF-Generator.
- Wechselspannungs-Millivoltmeter.
- Gleichlauf-Messgerät.
- Universal-Testcassette SBC419Cr 4822 397 30069.

Anmerkungen (siehe Bild 12)

- *a Höchstzulässige Geschwindigkeitsabweichung 2%. Auch kann der Jaulwert abgelesen werden, der höchstens 0.3% betragen darf.
- *b Vormagnetisierung ausschalten durch Entfernung von R401.
- *c Bei weniger hoher Genauigkeit lässt sich auch eine Chromium-Cassette guter Qualität verwenden.
- *d - Falls nötig Messung wiederholen.
- Beim Einstellen des einen Kanals kann der andere ein wenig beeinflusst werden.
- Bei einer richtigen Einstellung verläuft der Frequenzgang wie in Abb. 11 Kurve b, Verzerrung $\leq 3\%$.
- Bei einer zu geringen Vormagnetisierung wird die Verzerrung zu gross. Der Frequenzgang sieht dann aus wie in Abb. 11, Kurve a, dargestellt.
- Bei einer zu grossen Vormagnetisierung werden die Höhen abgeschwächt, siehe die Kennlinie in Abb. 11 Kurve c.

I MISURE E REGOLAZIONI ELETTRICHE (vedere Fig. 12)

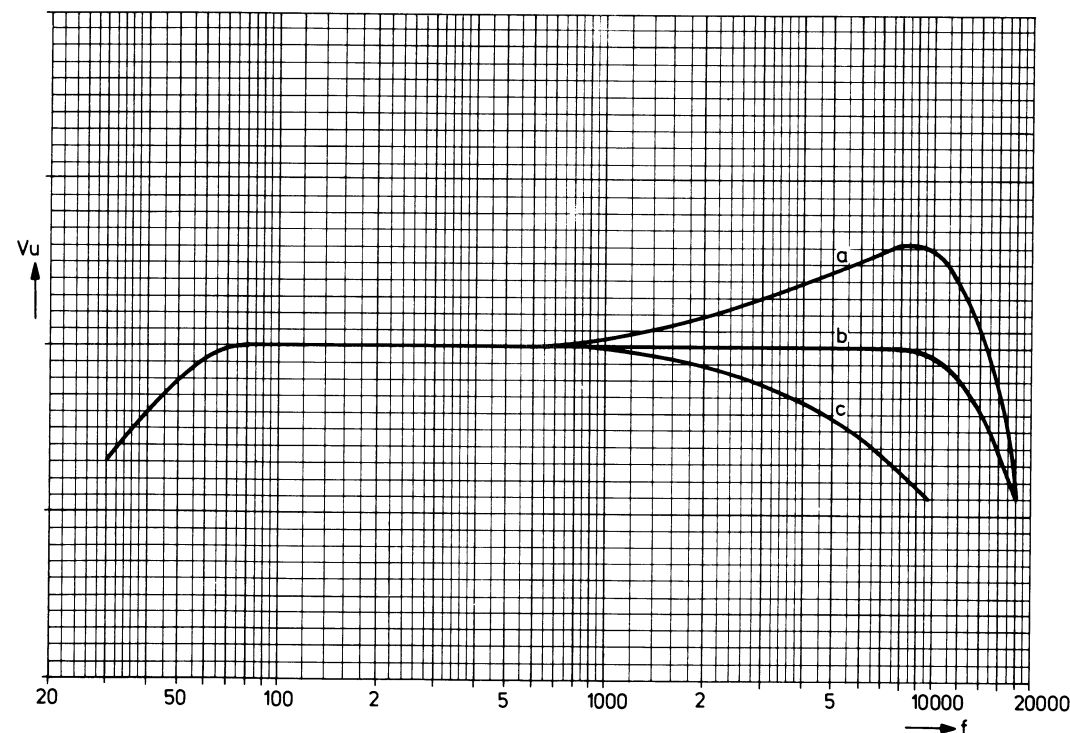
Le seguenti misure e regolazioni sono riferite al canale sinistro. I punti di misura e di regolazione per il canale destro sono riportati tra parentesi. Prima di ogni misura o regolazione con in funzione la cassetta bisogna smagnetizzare le testine e le guide del nastro. Si raccomanda di pulire le testine prima di ogni misura o regolazione che preveda l'uso della cassetta.

Cassetta campione e strumenti richiesti:

- Frequenziometro.
- Generatore bassa frequenza.
- Millivoltmetro.
- Misuratore di Wow e Flutter.
- Cassette campione universali SBC419Cr 4822 397 30069.

Nota (vedere Fig. 12)

- *a Massima deviazione tollerata 2%. Può essere letto anche il Wow. Questo può essere come massimo 0,3%.
- *b Togliere la premagnetizzazione togliendo R401.
- *c Si il controllo non deve essere molto accurato, si può utilizzare una cassetta al cromo di alta qualità.
- *d - Se necessario regolare ancora una volta.
- Quando viene regolato un canale, questo può influire sulla regolazione dell'altro.
- Se la regolazione è corretta la curva della risposta in frequenza sarà simile alla curva b della Fig. 11. Distorsione $\leq 3\%$.
- Se la premagnetizzazione è troppo bassa, la distorsione aumenterà. La curva della risposta in frequenza sarà quella della curva a della Fig. 11.
- Se la premagnetizzazione è troppo alta ne risulterà un'eccessiva attenuazione delle frequenze alte, vedere curva c della Fig. 11.



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Fig. 11

Adjustment	Cassette	Recorder in position	Apply signal to	Measure on	Read on	Adjust with	Adjust to
Playback speed	3150 Hz of SBC419	Play SK501 tape Tape	—	BU352 (BU302)	Wow- and flutter meter	R motor	*a 4,76 cm/s
Azimuth R/P head	10 kHz of SBC501 tape	Play SK501 tape Dolby off	—	BU352 (BU302)	mV-meter	Left screw R/PB head	Max. output + outp. L ≈ outp. R
Erase oscillator frequency	—	Play + Rec SK501Cr SK501, tape SK401 „1,,	—	MP3	Frequency counter	S401	73 kHz ±200 Hz
BIAS	—	SK501, tape Play, Rec SK501Cr SK401 „1”	—	MP1 (MP2)	mV-meter	R296 (R246)	24 mV±2 dB
Playback sensitivity	SBC419Cr 315 Hz-0 dB	Play SK501, tape	—	BU352 (BU302)	mV-meter Led ind L/R	R286 (R236)	L/R 375 mV±1 dB
						R566 (R516)	0 dB on Led ind. L/R
Playback Freq. Response	SBC419Cr 40 Hz-250 Hz-6.3 kHz-12.5 kHz	Play SK501Cr SK501, tape Dolby off	—	BU352 (BU302)	mV-meter	Check only	See Freq. Response 70 Hz-12 kHz ± 8 dB
Recording sensitivity + Led bar-indication	SBC419Cr side 2 —	R505/555 max Play+Rec SK501 aux SK501Cr SK302 aux	200 mV 315 Hz BU351 (BU301)		Led ind. L/R	R566 (R516)	Led V/L=Led VU/R=0 dB
				MP4 (MP5)	mV-meter	R275 (R225)	65 mV±2 dB on MP4 *b (MP5)
Bias + Freq-response	SBC419Cr side 2 d*	Play+Rec SK501 aux SK501Cr Dolby off SK302 aux	BU351 (BU301) 315 Hz 200 mV		Led ind. L/R	R505/555	0 dB on led ind. L/R
			Decrease input to —20 dB	Record a number of frequencies; 70 Hz-315 Hz-6,3 kHz-12 kHz (at 20 dB)			
		Play the Recording made		BU352 (BU302)	mV-meter	R296 (R246)	Check the freq-resp. 70 Hz-12 kHz c*
19 kHz Suppression	—	Play+Rec SK501 aux Dolby off SK302 aux	BU351 (BU301) 19 kHz 150 mV	BU352 (BU302)	mV-meter	S251 (S201)	Minimum output

Fig. 12

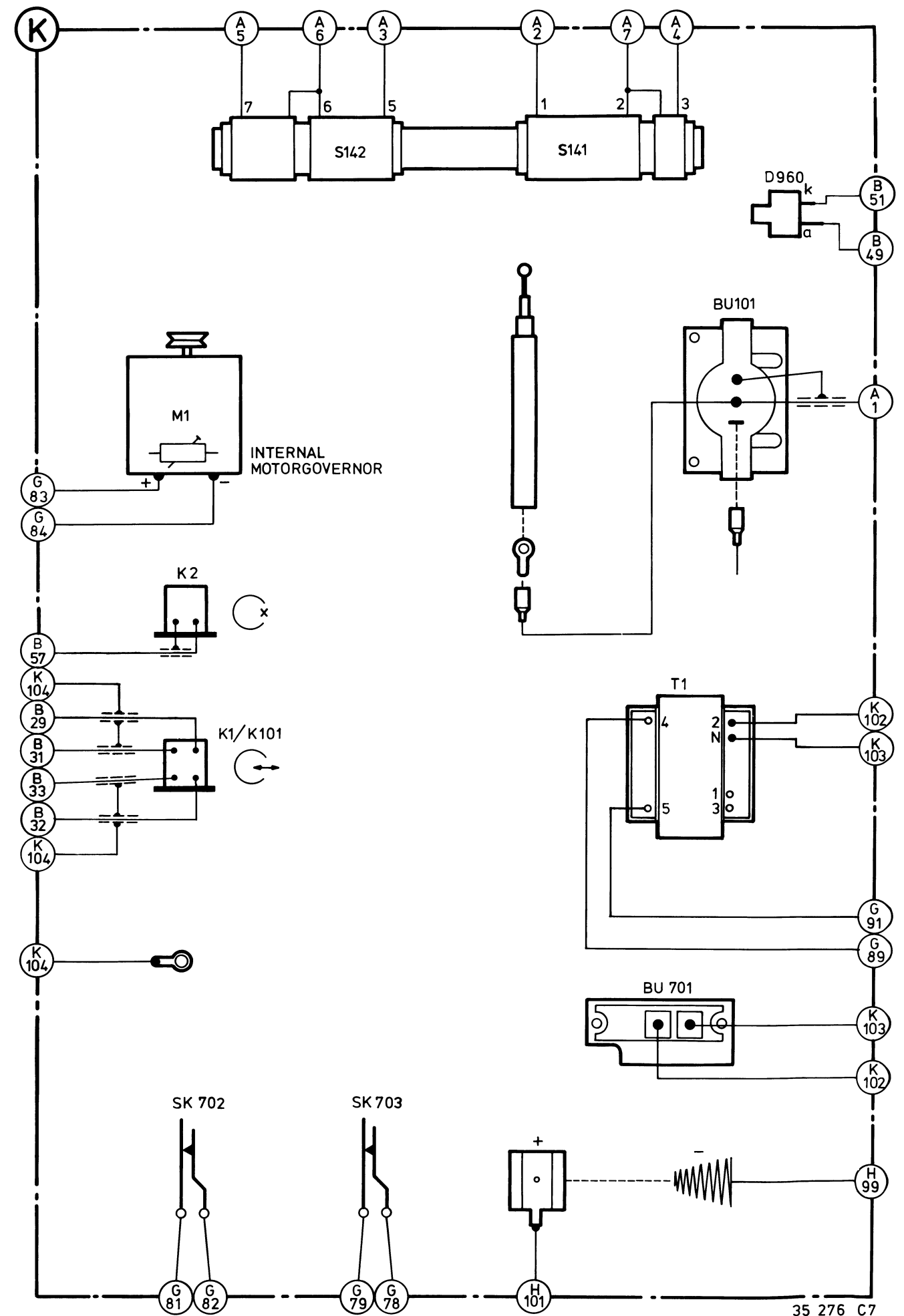


Fig. 13

-IC- 		-C- 	
AN6884	4822 209 81552	C100	4822 125 50134
AN7166	4822 209 81503	C141	4822 125 50045
AN7410	4822 209 80683	C146	4822 125 50045
HA12047	4822 209 81835		
TEA5570/3	4822 209 81563		
-TS- 		-R- 	
BC337/25	4822 130 41943	R190	10 k 4822 100 10035
BC548A	4822 130 40948	R225	22k 4822 100 10051
BC548C	4822 130 44196	R236	22k 4822 100 10051
BC549C	4822 130 44246	R246	47k 4822 100 10079
BC550C	4822 130 41096	R275	22k 4822 100 10051
BC558	4822 130 40941	R286	22k 4822 100 10051
BC558B	4822 130 44197	R296	47k 4822 100 10079
BD238	4822 130 40917	R310	4E7 Δ 4822 111 30499
BF495D	4822 130 41498	R354	4E7 Δ 4822 111 30499
2SK168E	4822 130 41943	R355	4E7 Δ 4822 111 30499
-D- 		R401	4E7 Δ 4822 111 30499
S5VB10	4822 130 30984	R505	10k 4822 105 10575
BA316	4822 130 30302	R516	10k 4822 100 10035
BZX79-C1V4	4822 130 34047	R566	10k 4822 100 10035
BZX79-B4V7	4822 130 34174	R603	50k 4822 105 10569
BZX79-B5V6	4822 130 34173	R605	50k 4822 105 10569
GL9NG9	4822 130 31433	R605	50k 4822 105 10569
GL9PR9	4822 130 31432	R606	50k 4822 105 10569
LN25RP	4822 130 31923	R607	50k 4822 105 10569
OA95	4822 130 30191	R626	50k 4822 105 10572
SLP-158B	4822 130 32201	R627	100k 4822 105 10573
SLP-167B	4822 130 32102	R630	50k 4822 105 10571
1N4001G	4822 130 31438	R632	2E2 Δ 4822 111 30492
1N4148	4822 130 30621	R635	2E2 Δ 4822 111 30492
S3V10	4822 130 41172	R642	100k 4822 105 10574
-S- 		R682	2E2 Δ 4822 111 30492
S102	4822 158 10515	R685	2E2 Δ 4822 111 30492
S103	4822 158 10515		
S104	4822 153 50206		
S140	4822 156 30811		
S141	4822 156 10685		
S142	4822 156 10691		
S143	4822 156 10687		
S144	4822 156 10689		
S150	4822 156 10688		
S151	4822 156 10737		
S152	4822 242 70249		
S153	4822 242 70249		
S154	4822 156 10686		
S155	4822 156 10737		
S156	4822 157 51184		
S201	4822 157 51773		
S251	4822 157 51773		
S401	4822 156 50026		
-Miscellaneous-			
BU101			4822 267 30384
BU301			4822 267 50444
BU601			4822 267 30385
BU602			4822 267 30539
BU652			4822 267 30539
BU701	Δ		4822 267 30537
F701	Δ		4822 253 10056
SK101			4822 276 40287
SK301			4822 277 60189
SK302			4822 277 20755
SK401			4822 277 20893
SK501			4822 276 11278
SK701			4822 276 11279
T001	Δ		4822 146 20852
Scale			4822 333 30147

GB

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

NL

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

F

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

D

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

I

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.